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**A sketch of the Natural Order LILIACEÆ, as represented in the Flora of the States of Oregon and California, with special reference to the Plants collected in a Excursion along our Pacific Coasts, A. D. 1866.**

BY ALPHONSO WOOD.

(Commencing at San Diego, Jan. 28, I made wide excursions in that vicinity until Feb. 19. Here the hills are covered with four species of the Cacti, with other plants. Thence journeying north, I visited the splendid plains of San Louis Rey, and of Anaheim, &c. Arrived at Los Angeles on the 23d. Here flourish almost all the tropical, together with the temperate fruits, in great abundance. My daily excursions here extended to San Gabriel, to the Granite Mountains north and east, to Cocomungo and San Bernardino east, and to San Pedro west. Next journeyed to San Buenaventura,—a most delightful trip, much of it on the beach. Hence diverged to Ojai Ranch and the Sulphur Mountains. Thence to Santa Barbara, known for its grand Mission church, still in good repair. On the 28th of March I left for San Louis Obispo, where I spent three days on those magnificent plains and lofty buttes. Next on the Salinas Plains, the Gavilan Mountains, and the vicinity of Monterey four days, and April 4th to 7th in the rich Pajaro Valley and adjoining Redwood Hills. April 7th to 17th botanized in the remarkable region of Santa Cruz, and the following week on the splendid plains and hills of Santa Clara and San Jose, south and east of the Bay. April 23d to May 6th, in the vicinity of San Francisco, San Mateo, Oakland, &c.

Our next journey was to the Giant-wood of Calaveras, with side excursions to Sacramento, Lincoln, Folsom, Murphy's and Vallecito, returning on May 31st. The plains were now dressed in their most brilliant robes, in which the golden and purple Mariposas shone conspicuous.

A trip to the Geysers commenced June 1st, when the Geyser Mountains were red with Clarkias. In this journey we visited Petaluma, Sebastopol, Santa Rosa and Healdsburg, which latter place yields a rich harvest to the botanist. Returned June 7th.

Next day commenced our long tour northward, again visiting Sacramento, Marysville, and exploring the Yuba River to near Downieville. Thence Oroville, Chico, are visited; Red Bluff and Shasta, where I explored the head-waters of the Sacramento. Thence over the Trinity Mountains, where Breyvoortia had long bloomed unknown, and over Scott's Mountain, reaching Yreka June 17th. From this place enjoyed a grand excursion over the volcanic plains, thirty miles, to Mt. Shasta.

June 21st crossed the State line, on the Siskiyou Mountains, into Oregon, and for three days explored the splendid valley of Rogue River, in the vicinity of Jacksonville. Next three days were spent in pleasant excursions up and down the Umpqua Valley, from the bright little town of Wilbur. At Eugene, 100 miles to the north, entered the vast plains of the Wahlamette River. Reached Albany July 1st, and Salem, the capital of Oregon, July 4th. Here spent three days in botanic trips, in company with Dr. Wythe of the Wahlamette University. Hence thirty miles to Oregon City, a place of infinite water-power, and one hundred miles from Eugene,—the entire length of this great valley. Hence to Portland twenty miles, and to the ocean one hundred miles navigation for the largest steamers.

From the city of Portland, June 9th to 17th, my long excursions radiated, usually in excellent company. By the waters of the Great Columbia I reached the Dalles on the 18th, laboring diligently one week, with Judge Wilson often as guide. Returning, spent one day at the famous Cascades, where the river has torn asunder the mountains, which are supported on columns of basalt. Next I am perambulating the rich woods and meadows of Forest Grove, twenty-five miles west of Portland. A day at Milwaukie, Oswego and Oregon City, where friends and botanists had already collected herbaria for my use. August 7th to 11th at Astoria, and Clatsop Plains, at the mouth of the Columbia. Once more reach, and leave Portland, accompanied by friends brave and true (Dr. Atkinson, J. Deerdorf, &c.), for the Cascade Range and Mt. Hood, in full view sixty miles eastward. On that awful summit we stood Aug. 20th, and estimated its height at 17,000 feet,—water boiling at 180° Fahr.

On the 25th, started from Monticello, Washington Territory, in a canoe rowed by Indians, on a two days' excursion up the Cowlitz River. Everywhere in dark, gloomy forests of the Douglas Fir (*Abies Douglasii*),—would supply the world with lumber for a thousand years. Finally, on the 31st, leave Portland by steamer Montana for the Pacific, and for San Francisco, 600 miles distant.

Our final excursion was to the Yosemite,—last, not least. A day or two at Benicia and around Mt. Diablo (whose flowers had already been gathered for me by Rev. J. P. Moore), once more at Stockton, and across the vast plain to Bear Valley, Mt. Bullion, and Mariposa, and I surveyed alone the Giant-wood of Mariposa. Four days I went up and down in Yosemite, plucking flowers from the bases of cloud-capped rocks, and on the 22d of September am again in San Francisco, whence, on the morning of the 29th, with many a trophy, I embarked for home.)

Tribe I.—*TULIPEÆ*.

*ERYTHRONIUM GRANDIFLORUM*, Pursh. Scape tall (1—2 f.), 1—3-flowered; perianth segments yellow, acuminate, reflexed from near the base; stigmas 3, distinct, revolute; leaves spotless.—Woods, from the Sacramento to the Co-1868.]

lumbia River, and northward. Bulb oblong-ovoid. Flowers (when more than one) racemed, as if by the splitting of the scape.

*β. multiflorum* (Torr.) Flowers 5–8 in the raceme.—Sierras.

*γ. multiscapidea* (Kellogg). Scapes several, all radical, each 1-flowered.—Sacramento Valley (Dr. Stillman. V. s. in herb. Torrey). A remarkable plant; but the scape is often one only, and then undistinguishable from var. *α*.

*E. GIGANTEUM* Lindl. Scapes 5 or 6-flowered; segments acuminate; stigmas united and club-shaped, somewhat 3-lobed.—Oregon to Idaho (Mr. E. Walker), and northward. My specimens are all 1-flowered, and too small to justify Lindley's name. Flowers straw-yellow.

*LILIUM CANADENSE*, *β. puberulum* (Torr.?) Tall, strict (3–4 f.); stem and peduncles minutely puberulent; leaves some opposite, some verticillate, often some scattered; flowers few (often but one); segments orange-yellow, with brown dots, oblong, reflexed from below the middle; anthers oblong; stigma entire, 3-lobed.—Yuba Co. to the Columbia. Flowers large, showy, 1–7. June, July.

*γ. minus*.—Glaberrimum; foliis plerumque sparsis; flore sæpius unica *β* dimidio minore; antheris ovalibus, basi affixis.—Meadows near Mt. Shasta, and in Oregon. June. (Var. *parviflora* Hook. is undescribed.)

*δ. Walkeri*. Floribus multis (12–15) minimisque (policaribus); racemo elongato; foliis verticillatis—Idaho (Mr. Elkanor Walker).

*L. WASHINGTONIANUM* (n. sp.) Glaberrimum; foliis plerumque verticillatis, oblanceolatis vel obovatis, breviter acuminatis; floribus permagnis, infundibuliformibus, basi attenuatis, umbellatis vel sæpe solitariis, subnutantibus; segmentis spatulatis, apice cuspidatis, basi longe angustatis, supra recurvatis, 3-policaribus; intus fusco-maculatis, odoratissimis; anth. oblongis; stig. integro.—In woods here and there, from Yosemite to the Columbia. 3–5 f. Flowers purple, varying to white.

This splendid lily seems to have been overlooked by the botanists, or confounded with the preceding. It is well known to the miners, who recognize its superior qualities, and call it the "Washington Lily."

#### FRITILLARIA, Tournef.

\* Flowers tessellated, purple and yellow. Caps. 6-winged.

*F. MUTICA* Lindl. Stems many (3–9)-flowered, naked below; leaves verticillate, linear-lanceolate, obtusely pointed; flowers racemed, nodding, bell-form, as long as the pedicels (1'); segments oblong, acutish, tessellated with dull purple and greenish-yellow; style trifid; capsule 6-winged.—California; common in the interior. 2–3 f. Lvs. 2–3'. The one radical leaf is ample, elliptical. Bulb of white, thick scales. April, May.

*β. foliosa*.—Procera; foliis majoribus (5–6'); floribus parvulis, segm. linearibus, 9''.—In deep shades, Redwood hills. 3–5 f.

*F. LANCEOLATA* Ph. Stem strict, 1–2-flowered; leaves lanceolate and linear-lanceolate, verticillate or opposite; flowers nodding, obconic, obtuse at base, longer than their pedicels; segments oblanceolate, rather obtuse, tessellated with purple and yellow; capsule broadly 6-winged.—Monterey to Portland, north and east. 1–2 f. Lvs. 2–3'. Stem naked below, as in *F. mutica*. The capsule is broader than long. It is more than probable that *F. mutica* runs into this.

*F. PARVIFLORA* Torr. (P. R. R. Rep. IV.) Leaves narrowly lance-linear, whorled or scattered; flowers small, few or many, in a long raceme, on short pedicels, nodding; perianth narrow at base; style trifid to near the middle; capsule 6-winged.—Santa Cruz, Gavilan Mts. Murphy's (Calaveras Co.) Radical leaf broad. Stem lvs. about 2' by 2''. Flowers 1–20, greenish and purple.

[June,

\*\* Flowers brownish-purple, not tessellated. Fr. wingless.

*F. KAMTSCHATCENSIS* Gawl. Bulbs granulated; leaves lanceolate, irregularly verticillate; flowers 1—3, pendulous, brown-purple, spotless, bell-form, much longer than their pedicels; segments lance-elliptical, acute, veins inside more or less lamellated; nectaries oblong; capsule obtusely 6-angled.—Coast, San Diego to Sitka (and Kamtschatka). The bulb consists of thick farinaceous scales, loosely conjoined. Stem 8—12'. February—April. (*F. biflora* Lindl.)

*F. RECURVA* Benth. Stem tall, naked at base; leaves linear or oblong-linear, some whorled near the middle of the stem; flowers several, subcylindrical, suberect; segments oblong, reflexed at the end, longer than their pedicels; stigmas subconnate; ovary oblong, fr. wingless.—California (Hooker), Umpqua Valley, Oregon (Mrs. Royal). 2 f. Flowers  $1\frac{1}{2}$  inches long, light purple.

\*\*\* Flowers yellow. Capsule wingless.

*F. LILIACEA* Lindl. Stem leafy at base; leaves oblong-lanceolate and linear, the lower whorled or opposite; flowers 1—5, racemed, nodding, bell-form, with a narrow base, yellow; pedicels erect, longer than the bracts; capsule oblong, blunt at both ends; style 3-cleft.—San Francisco (Dr. Stillman), Benicia (Rev. J. P. Moore), to Nevada. 8—14'. Nectary a groove. Very pretty. March.

*F. PUDICA* Spreng. Low; leaves lance-linear and linear, opposite or scattered; flower solitary, nodding, bell-form, yellow; peduncle as long as the bract, recurved at top; segments oblong-obovate, obtuse; style and stigma undivided; ovary wingless.—Dalles of the Columbia (Mrs. Wilson), and east. 6—9'. Leaves few, 3'. Nectaries nearly obsolete, hence first named by Pursh a *Lilium* (*L. pudicum*).

*YUCCA ALOIFOLIA* L.?—Hills, near the Hot Springs, San Bernardino (March 10th), only the leaves and the dead scapes of the preceding year. Leaves densely capitate near the ground, 12—15' by 1', very rigid, sharply serrulate, glaucous, ending in a strong spine. Scape very stout, 10—15 f. high.

*Y. GRAMINIFOLIA* (n. sp.)—Mountains twelve miles east of Los Angeles (March 3d). Saw only leaves, and dead scapes with the fruit. Leaves very numerous, in a dense radical crown, linear, 2 f. by 3—4'', glaucous, not very rigid, rough-serrulate, round-carinate, involute above, and ending in a sharp spine. Scape 10—15 f. high, paniculately branched, bearing hundreds of "white, bell-form, pendulous" (Mr. Hoover) flowers. Capsule 1' thick,  $1\frac{1}{2}$ ' long, 6-lobed, 6-celled, packed full of disc-form, thin, black seeds. The leaves are not at all filamentous.

*Y. FILAMENTOSA* L.?—Mountains east of Los Angeles, with the last. Only the leaves seen (March 3d), which are densely clustered, yellowish-green, with brown spots and transverse lines at intervals, with no midvein, thick, lance-linear, rolled above and sharp-pointed, margin splitting into strong, recurved filaments.

*CALOCHORTUS*, Pursh. (*Καλός*, beautiful, *χῆρος*, grass.)

(*Cyclobothra* and *Calochortus* of authors.)

Perianth 6-parted, regular, deciduous; segments distinct, contorted in æstivation; sepals oblong or lance-linear, spreading, much smaller than the petals; petals connivent or spreading, broadly obovate, cuneate-unguiculate, bearded within, with a glabrous spot above the base; stamens 6, perigynous; fil. subulate; anthers linear-oblong, deeply perforated at base where the filament is inserted; ovary free, 3-angled; style very short or none; stigmas recurved, persistent on the 3-celled, 3-valved, chartaceous capsule; seeds angular, one row in each cell.—Bulbous erect herbs of the North American Pacific States. Leaves narrow, acuminate. Flowers few, terminal, solitary, nodding or erect, showy.

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The acknowledged error of Lindley, Kunth, &c., of referring the *original species* of Pursh (*C. elegans*, A.D. 1816) to a genus invented ten years later (*Cyclobothra*, Sweet, 1826), is avoided by including both genera in one, under Pursh's name. Moreover, Sweet's genus cannot possibly be distinguished by "fovea nectarifera altè impressa" (the only distinction relied upon), for in *C. elegans* and its congeners "the pit" fades away by degrees, becoming imperceptible. If, however, the two genera be insisted on, Sweet's name must give place to the prior one of Pursh, and a new name (none more appropriate than *Mariposa*) conferred in place of the *Calochortus* of Lindley, &c. No one acquainted with these beautiful flowers will regret the disuse of so distasteful a name as *Cyclobothra*.

‡ *Calochortidea*. Petals impressed inside with a nectariferous pit, which is gibbous outside, beard scattered, soft, margin ciliate-fringed.

\* Perianth ventricous, pendulous.

*C. PULCHELLUS*. Erect, branched above; flowers globous, yellow; the upper in pairs and threes, lower often solitary, all with long bracts; sepals lance-ovate, acuminate; petals concave, connivent, fringed, twice broader than the sepals, the pits large and deep; anthers mucronate; ovary ovoid.—Mt. Diablo (Rev. J. P. Moore), and the interior of California generally, less common than the next. 1 f. Its pendulous golden globes make a fine appearance. May. (*Cyclobothra pulchella* Benth., in Hort. Trans., n. ser., i, p. 413.)

*C. ALBUS* Dougl. Erect or inclined, branching; flowers oblong, inflated, white, the upper in pairs, with lanceolate acuminate bracts; sepals lance-ovate, concave, scarcely fringed petals; anthers obtuse; ovary obovoid.—California, common in all the foot hills. 1—2 f. Leaves and bracts lance-linear and long pointed. Flowers 1' or more long, of a delicate pearly whiteness. May, June. (*Cyclobothra alba* Benth., l. c., *C. alba* and *paniculata* Lindl.)

\*\* Perianth expanding, nodding (not pendulous).

*C. ELEGANS* Pursh. Stem slender, with one radical, linear leaf; flowers in pairs or threes, open, nodding or suberect, white or purplish; sepals oblong, cuspidate, greenish-purple, the petals much larger, roundish-obovate, soft-bearded within except its purplish pit, ciliate-fringed, and a short cusp at apex; anthers acuminate, white; stigmas recurved; capsule 3-winged, finally oval and reflexed on the elongated pedicels.—In cool mountain shades, Mt. Shasta to the Columbia. 10—16'. Petals near 1' long, the pit strongly impressed. June. (*C. Tolmæi* Hook., *Cyclobothra elegans* Lindl., Bot. Reg. t. 1662.)

β. *nanus*. Folio angustè lineari v. filiformi, florem unicum longe excedente; ped. filiformi bracteis subulatis duabus instructo; perianthii capillis fuscis.—High hills, Yreka. Also on Mt. Hood. 5—8'. June—August.

‡ *Mariposa*. Perianth erect, open. Sepals convolute-acuminate. Petals plane, erect-spreading, often spotted, but with no nectariferous pit. Seeds oval, compressed. (Vide *C. venustus*, below.)

\* One radical leaf exceeding the slender stem. Petals straight, spotless? Pods oval, obtuse, nodding

*C. UMBELLATUS* (n. sp.) Folio radicali unico, lineari, caulem et bracteis foliosas longe excedente; floribus 5—9, fere umbellatis, erectis; pediculis subradicalibus, longissimis, ebracteatis, fructiferis recurvatis; petalis flabelliformibus, apicè rotundatis, erosis, glaberrimis, basi squamâ ciliatâ instructis, albis, concoloribus; antheris oblongis, obtusis; capsula 3-alata.—In collibus altis prope Oakland, California (legimus Sanborn et nos). Caulis 6—8 poll. Folium pedale. Petala 10 lin. Maia. (*Cyclobothra elegans*, var. Torr.? R. R. Rep. iv.) Distinguished from *C. elegans* by its many flowers, beardless petals, entire absence of nectary, &c.

*C. UNIFLORUS* Hook. One radical lance-linear leaf larger than the several cauline ones; flower single, lilac, on a long, nearly radical peduncle; sepals linear, acuminate; petals triangular-fan-shaped, bearded just at base. with a

[June,

small purple spot; anthers linear-oblong, obtuse, blue; style short, distinct. —High plains, Santa Cruz, &c. Scape 6'. Flower 1' long. April. Clearly distinct.

*C. NITIDUS* Dougl. Radical leaf lance-linear, much larger than the few cauline, all long-pointed; flowers 3—4, orange-yellow, pedicels elongated; sepals elliptic, acute; petals same length, roundish, bearded all over inside with clavate hairs; anthers short, acuminate; capsule oval, wingless, drooping.—Yuba and Tuolumne Counties. 6—8'. Leaf 1 f. Flowers brilliant, 15'' broad. May.

*β. cornutus.* Sepalis longè acuminatis, corollam excedentibus. Flore unica; fol. angustè lineari.—Dutch Flat. 4—6'. Fl. 1' lato.

\*\* Stem leafy, erect, branched, rigid. Perianth large, broad-campanulate, the petals recurved-spreading above the middle, spotted (except *C. Weedii*).

*C. VENUSTUS* Benth. Branches few, 1-flowered; leaves few, narrowly linear; sepals lanceolate, acuminate, greenish outside, a purple eye bordered with yellow inside; petals many times larger, flabelliform, straw-white, variegated, a tuft of hairs below, a purple crescent bordered with yellow near the middle; stamens one-third as long as petals, anthers longer than filament; pod lance-oblong.—Plains and foot hills, California. 1½—2 f. Flowers 2½ inches broad. This splendid flower (with the next two) has long been known to the native Californians by the name of *Mariposa* (Spanish for butterfly).

*C. SPLENDENS* Benth. ? Stem stout, 3—5-flowered; leaves narrowly linear; sepals lanceolate, acuminate, revolute, green, longer than the petals, a small brown spot in the middle; petals broad-obovate, rounded at apex, lilac, sparsely bearded below, a brown-yellow eye in the middle; anthers large, longer than filament (6''), blue (Bentham).—Santa Clara, &c., not rare. 1—2 f. Flowers as large as in No. 7. Perhaps it runs into that species. May.

*C. MACROCARPUS* Dougl. Bulb oblong; stem 5-leaved, 2-flowered glaucous; leaves convolute, sheathing at base; pedicels enlarged upwards; sepals lance-linear, longer than the petals, lilac, with a green line outside; petals obovate, short acuminate, tapering to base, lilac or bluish-purple, greenish at base inside, and with a tuft of beard; anthers acuminate, as long as filament; capsule lance-oblong, very long (3—4').—Dalles of the Columbia, &c., common. August.

*C. LUTEUS* Dougl. Stem about 3-flowered; leaves convolute-acuminate, shorter than the slender peduncles; sepals oblong, pointed and recurved at apex, scarcely shorter than the petals, yellow; petals yellow, broad-cuneate, rounded at apex, bearded across the base, a roundish red spot near the middle; anthers as long as filament; capsule elliptical.—Plains of Sacramento and San Joachin. 1—2 f. Flowers smaller than in the foregoing, very brilliant. May.

*C. WEEDII* (n. sp.) Caule subtrifloro; foliis convolutis-filiformibus, pedunculo divaricato multo brevioribus; floribus aurantiacis-luteis, concoloribus; sep. oblongis, acuminatis, petala excedentibus, basi barbatis; pet. cuneato-obovatis, intus omnino barbatis, ciliatis, basi barbibus fasciculatis; stam. fere longitudine petalorum, anth. filamentis brevioribus; ovario lineari.—San Diego (ligit *Weed*). Caulis gracilis, rigidus, 1—2 ped. Flores magnitudine *C. lutei*; pet. 15 lin. Stam. et pistilla, 1 pol. April. Very distinct.

*C. NUTTALLII* Torr. "Stem 2-flowered; leaves very narrowly linear; petals obovate-cuneate, rounded at summit, white except the yellow base, with an oblong dense tuft of hairs on the claw, a purple spot just above, and a few scattered hairs. (*C. luteus* Nutt.) Noble's Pass, Sierra Nevada, July 3." (P. R. R. Rep. ii, 124.) *V. s. in herb. Torr.\**

\* The frequent references like the above, in these pages, indicate the extent of my obligations to that eminent botanist, Dr. John Torrey, of Columbia Coll., New York.

Tribe II.—*ASPHODELEÆ*.

*CAMASSIA ESCULENTA* Lindl.—Fine specimens from Marin Co. (Dr. Stillman) to Portland (Mr. Walker, Mrs. Shepley). Bulb white, furnishing to the Indians a rich diet. Leaves broadly linear, nearly the length of the scape (12—18'); raceme 6—10-flowered. Flowers 1' long, blue, alternate. Sepals lance-oblong, 5—7-veined. Cells of the capsule about 12-seeded.

*ALLIUM*, Linn.

‡ Bracts of the spathe 2, rarely 1 or 3.

\* Sepals acuminate, longer than the stamens.

*A. FALCIFOLIUM* Hook. Bulb globular, white; leaves 2 or 3, linear, recurved, shorter than the scape; spathe colored, of 1 or 2 bracts, shorter than the pedicels; flowers 10—30, rose-purple, two or three times shorter than their stalks; sepals lance-ovate, carinate-acuminate, more or less glandular-serrulate, recurved, more than twice longer than the unequal stamens.—San Diego to Salem (Oregon). 10—20'. Pedicels 1'—18''. March—May. Hooker's plant had "lanceolate" leaves. None wider than lance-linear appear among my specimens.

*A. DOUGLASSII* Hook. Bulb ovoid, white; leaves linear, erect, mostly two, shorter than the scape; spathe 2 bracted, about as long as the pedicels; flowers about 20, rose-purple, two or three times shorter than their stalks; sepals ovate, gibbous at base, rather acuminate, straight, a third longer than the subequal stamens.—Throughout Oregon, California and Nevada. 10—20'. Pedicels 1'. San Diego specimens have sepals broadly ovate, merely acute. Nearly allied to *A. falcifolium*, but readily distinguished by the sepals (sepals and petals).

*A. ACUMINATUM* Hook.? Bulb ovoid, often purplish; leaves 2—3, narrowly linear, shorter than scape; umbel densely ∞-flowered, globular, 1' or more in diameter; spathe 2—3-bracted; pedicels not longer than the purple flowers (3—5''); sepals ovate or oval, acuminate, gibbous at base, near twice longer than the stamens; capsule ripening 1—3 black seeds.—Hills, Santa Clara Co. to the Wahlamette. Scape 1 f. or more. Umbel small and compact, 20—40-flowered, very pretty. April, May.

*β. gracile*. Scapo gracillimo; umbella 20-flora,  $\frac{3}{4}$  pol. diam.; segmentis (siccis, post anthesin) inflectis, albis; semine unico.—On Feather River, Oroville.

\*\* Sepals acute, equalling the stamens.

*A. TRIBRACTEATUM* Torr. Bulb ovate; scape low (3—4'); leaves 2, linear, much longer than scape; umbel 15—20-flowered; spathe of 3 ovate bracts; sepals lanceolate, acute; about equalling the stamens; capsule broadly obovate, 3-lobed, cells 2-seeded.—Hill sides, Duffield's, Sierra Nevada (P. R. R. Rep. iv, 92). *V. s. in herb. Torr.*

*A. AMPLECTENS* Torr. Bulb large; scape low, flexuous; leaves 2, longer than scape, filiform; umbel 3—6-flowered; spathe of two round concave bracts embracing the flowers; sepals oblong, obtuse; capsule 3-lobed, depressed, 6-seeded.—Hill sides, Sonoma, Cal. (Torrey, l. c., *V. s. in herb. Torr.*

\*\*\* Sepals acute, stamens exserted.

*A. CERNUUM* Roth.? Bulb ovoid-oblong, tapering upwards; leaves 5—8, narrow-linear, erect, shorter than the scape; umbel fastigiate, nodding, finally erect, with a short 2-leaved spathe, and about 20 small roseate flowers; sepals oblong-ovate, acute, shorter than the stamens and slender style; ovary 3-lobed, crowned with a 6-lobed crest!—Dalles of the Columbia and east.  $1\frac{1}{2}$  feet. Bulb  $1\frac{1}{2}$  in. long, eatable. Flowers 2'' long. Umbel 1' broad. August.

[June,

This plant combines the exserted stamens of *A. cernuum* with the 6-lobed crest of *A. stellatum* Nutt.

♂♂ Bracts of the spathe 4—6.

*A. SANBORNII* (n. sp.) Bulbo ovato, albo; foliis ante anthesin evanescentibus (ignotis); scapo gracilente, procero (2—3 ped.), basi longè vaginatis; umb. globosa, confertim 40—100 flora; spatha e bracteis 4 lanceolatis acuminatis; ped. filiformibus, floribus purpureis longioribus; segm. erectis, oblongis, basi gibbosis; interioribus longioribus; stam. et stylo gracillimo exsertis; fil. capillaribus, basi dilatatis; stigm. trifida; caps. trilobata, tri-sperma, glandibus 3 coronata; spermatibus angulatis, albo-luteis (immaturis). —In collibus umbrosis, Yuba Co. prope Foster's Bar (S. S. Sanborn, Esq.) Aug. Flores 3 lin. longi.

*A. MARITIMUM* Torr. Bulb globular, corm-like; leaves 3—6, linear, longer (often shorter) than scape; umbel about 10-flowered, fastigiate; spathe of 3—6 narrow bracts, sepals distinct almost to base, oval, with a wide midvein and callous tip, some longer than the stamens; fil. dilated at base; capsule globular, size of a peppercorn, 30-ovuled, perfecting about nine black seeds.—Hills near the sea and bay, Santa Cruz to Benicia and Marin Co. 6—12'. Flowers small, white. April.

*A. CROCCEUM* Torr. Leaves several, linear, as long as the slender scape (1 f.); umbel 9—12-flowered, pedicels spreading, 8—10''; spathe of 4—5 lanceolate, acuminate bracts; sepals oblong, acutish, orange-yellow, 4—5''; stamens shorter, fil. 2-toothed at base; capsule obovate.—Mountains east of San Diego (Mex. Bound. Rep. ii, 218). *V. s. in herb. Torrey.*

*HESPEROSCORDIUM*, Lindl. (*Ἑσπερος*, evening, *σκόρδον*, garlick.)

Perianth acute at base, articulated to the pedicel; segments 6, distinct, spreading above; stamens six, short, equal, fil. dilated, coherent and perigynous at base; ovary stipitate, many-ovuled; style slender; capsule ovoid, 3-celled, 3-valved; seeds , black.—Corm coated, scape umbelliferous. Involucre of 4 or more bracts. Flowers erect, white.

*H. LACTEUM* Lindl. Corm globular, fibrous-coated, brown; leaves 2, linear, shorter than the tall scape; flowers 10—25, shorter than their pedicels; segments cream-white, 1-veined, oblong, obtuse, 6—7'' long; fil. at base broad and connate, forming a corona half the length of the perianth; stipe nearly the length of the capsule.—San Mateo Co. (Mr. Easton), to the Sacramento and Wahlamette. 2 f. (*H. hyacinthinum* Lindl. is the same plant.)

*TRITELEIA*, Dougl. (*Τρίε*, thrice, *τέλειος*, complete.)

Perianth 6-parted, funnel-form, persistent, segments spreading, 1-veined; stamens 6, the 3 inner higher and longer; fil. adherent to the tube, anthers linear-oblong, fixed by the middle; stigmas 3-lobed, style distinct; capsule short-stipitate (in our species), cells 3, about 10-seeded.—Bulbous. Scape umbellate or 1-flowered. Spathe of 2 bracts.

*T. GRANDIFLORA* Lindl., Hook. Leaves linear, glaucous, shorter than the tall (2 f.) scape; spathe equalling the pedicels, which are scarcely as long as the perianth; stipe shorter than the ovary or the style; stigmas 3-lobed; umbel few-flowered.—Plains of the Columbia and Wahlamette. The specimen in Dr. Torrey's herbarium is from the Dalles. I did not meet with it. (*V. s.*) Flowers white?

*SUBERTIA*, Kunth. (In honor of Dr. Subert, a German botanist.)

Perianth funnel-form, attenuate at base, half-6-cleft; segments erect, 3-veined in the middle; stamens 6, included, fil. inserted at top of tube; anthers 1868.]

versatile, ovate lanceolate, obtuse, the 3 inner higher than the 3 outer; ovary oval, longer than its style, 3 to 5 times shorter than its stipe; capsule ovoid, ripening few black seeds from many (15—45) ovules.—Bulbous. Leaves lance-linear. Scape umbellate. Spathe of 3—6 narrow bracts.

*S. LAXA* Kunth. Bulb globular, fibrous-coated; leaves as long as the scape (12—18'), broadly linear (5—8''); pedicels 10—20, suberect, 2—3'; flowers violet-purple, segments with a triple midvein; stipe 5 or 6 times as long as the ovary (near 1').—California, middle and northern counties. Bulb as large as a musket ball. Flowers 16'' long. April, May. Very handsome.

*S. CROCEA* (n. sp.) Foliis 1—2 (v. pluribus?), linearibus, conduplicato-falcatis, erectis, scapo gracilente brevioribus, obtusis; spatha e bracteis 4 subulatis acuminatis, pediculis breviora; floribus 5 v. 6, basi acutis, supra sensim dilatatis (9 lin. longis), segm. æque obtusis, medio vena forti instructis; anth. oblongis, interioribus duplo altioribus; ovario quam stipes crassus triplo breviori; loculis 5-spermis.—Yreka, California. Caulis pedalis. Flores crocei. June.

*CALLIPRORA*, Lindl. (Καλλος, beauty, πρῶτα, front.)

Perianth of 6 segments united at base into a turbinate tube, spreading above, oblong, 1-veined; stamens 6, perigynous, 3 of them longer, fil. dilated, all tricuspidate, the middle cusp shortest, bearing the anthers; ovary short-stiped; style and stigma undivided; capsule 3-celled, 3-seeded, seeds black.—Bulbous. Leaves linear-ensiform. Scape umbellate. Spathe of 3 or 4 bracts. Flowers 5—20, yellow. (*Calliprora* Kunth.)

*C. LUTEA* Lindl.—Hills, Santa Cruz, to Healdsburg and the Sierra Nevada. A handsome plant, 1 f. Bulb globular. Leaves 1—3, as long as the scape, channeled. Segments 6—10'' long, the vein greenish outside. Pedicels 1—2'. Specimens from the Coast Range have a much smaller flower than those from the interior. April, May. Differs from *Subertia* chiefly in its stamens.

*BRODIAEA*, Smith. (Named for James Brodie, Esq., of Scotland.)

Perianth funnel-bellform, outer segments narrower; stamens 6, inserted into the throat of tube, exerted, outer anthers sterile, petaloid, the inner fertile, erect, fixed by the cleft base (shorter than the segments); ovary fusiform, narrowed to the sessile base; cells 3, 5—7-ovuled, style equalling the stamens, stigmas 3-fid; capsule substipitate.—Bulbous. Leaves 5, linear, exceeding the scape. Umbel few-flowered. Spathe 2 bracted. Flowers large, violet blue.

*B. GRANDIFLORA* Sm., *a. macrantha*, Torr. Bulb depressed-globous, fibrous-coated; pedicels stout, divaricate, then erect; flowers 4—8, rarely but 1, the inner segments nearly twice broader than the outer, all spreading above. Sterile stamens usually longer than the fertile, emarginate, yellowish.—Plains and hills, California. 8—18'. Flowers large, varying from 1' to 2' in length, on unequal stalks.

*B. TORREYI* (n. sp.) Bulbo magnq, depresso, tunica reticulata instructo; foliis multo elongatis; umb. 5—10-flora, subradicali v. scapo brevissimo, pediculis valde inequalibus; perianthii segm. suberectis, omnibus obtusis; anth. oblongis, castratis elongatis, bifidis.—Swampy places about Oakland, Napa, to Marysville, &c. Leaves 6—10'. Pedicels 3—6'. Flowers  $\frac{3}{4}$  inch long. I often saw the live plant, always with the same habits and characters. (*B. grandiflora*, *B. macropoda* Torrey, Bot. Whipp. Rep. 93.)

*B. PARVIFLORA* Torr. Scape roughish; umbel 15—20-flowered; pedicels shorter than the flower; sterile stamens ovate lanceolate, rather acute, entire; cells of the ovary 6—8-ovuled.—Sierra Nevada. (Torrey, in P. R. R. Rep., ii, 125.) *V. s.*

[June,

## DICHELOSTEMMA, Kunth. (Δίχλος, bifid, στέμμα, crown.)

Perianth 6-parted, limb erect or spreading; fil. 6, dilated, perigynous, the 3 outer exserted, petaloid, 2-parted either with or without an anther between the lobes, the 3 inner wholly adnate, antheriferous, rarely appendaged; anthers bifid at each end; ovary 3-celled, cells 3—5-ovuled; seeds few or many, black.—Bulb or corm globous. Leaves linear, flat. Scape tall, wiry, bearing a dense umbel of flowers. Spathe of 3 or 4 broad bracts.

‡ Only the three outer filaments appendaged. Flowers violet-blue.

D. CONGESTA Kunth. Leaves 1—2, narrowly linear; scape flexuous, erect (2 f.); flowers subsessile, in a globular umbel, tube tumid at base, contracted above the globular ovary; anthers 3; pedicels roundish; seeds angular, 5 in each cell.—Oregon and N. California, common. Flowers 9'' long, about a dozen in each umbel. March—May. (*Brodiaea congesta*, Smith.)

D. CAPITATA Benth.? Leaves broad-linear, glaucous; scape straight, erect (2 f.) flowers subsessile, few (5—9), compact, broad at base, not contracted above; anthers 6; pod ovoid, with 9 elliptical seeds.—San Diego to Yreka; often seen with the other, readily distinguished at sight. The seeds are thrice larger than in the preceding. The bulbs of both are largely eaten by the Digger Indians. February—April.

‡ *Stropholirion*, Torr. Filaments all appendaged; the lobes of the antheriferous much shorter than those of the sterile.

D. CALIFORNICA. Leaves long, linear; scape terete, twining on anything in reach, 5—10 f.! Umbels capitate, with 4 or 5 bracts; flowers tubular-bell-form, rose-purple, somewhat constricted above the ovary, articulated to the pedicels; cells 4-ovuled, 1-seeded; seed oblong, black. Common in the foot hills, Marin, Yuba and Placer counties. May. (*Stropholirion californicum*, Torrey, in P. R. R. Rep. iv. 149.)

## BREVOORTIA, Wood. Proc. Phila. Ac. N. Sci., June, 1867.

(Dedicated to J. Carson Brevoort, Esq., Reg. N. Y. Univ.)

Perianth tubular-pyriform (scarlet red), persistent, limb 6-toothed, reflexed, crown erect, of 3 broad truncate scales; stamens 3, fil. adnate, anthers free, exserted, opposite the inner segments (teeth), alternate with the scales of the crown, deeply bifid at base; ovary ovoid, 3-celled; cells 4-ovuled, style slender; capsule?—Bulbous? Leaves long, linear. Scape tall, erect, umbellate. Spathe of 4 bracts. Flowers 8—12, pedicellate, nodding.

B. IDA-MAIA Wood. High hills of the Trinity Mountain Range, Shasta Co., Cal. Glabrous, 2—4 f., leaves nearly as long, channeled. Flowers 1' long, pedicels 1—2'. Singularly beautiful, the tube scarlet, lobes chrome-green, crown yellow, and umbel subtended with 4 purple bracts. May, June.

## CHLOROGALUM, Kunth. (Χλωρίς, green, γάλα, milk.)

Perianth of recurved-spreading segments; stamens 6, equal, scarcely perigynous, as long as the segments; anthers 2-celled, fixed by the back; ovary free, sessile, cells 3, 2—3-ovuled; style filiform, stigma tricuspidate.—Bulb tunicated. Leaves radical, linear, carinate. Scape branching, with paniced racemes. *Soap Plant*.

C. POMERIDIANUM Kunth.—California, throughout the open country. The bulb is invested with a dense mass of black, hair-like fibres. Leaves broad-linear, recurved, the margins undulate. Scape 2—3 f. high, bracted, with a few spreading branches. Flowers erect, broad, white, in long loose racemes, open only at mid-day in May. The bulb is alkaline and mucilaginous; answering well for soap.

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## ODONTOSTOMUM, Torr. ('Οδούς, tooth, στόμα, mouth.)

Perianth salver-form, tube cylindric, limb of 6 equal spreading segments as long as tube; stamens 6, perigynous to top of tube, alternating with as many sterile filaments; style filiform; ovary globous, nearly free, 3-celled, 6-ovuled, capsule 6-seeded.—Bulbous, with broad linear leaves sheathing the divaricately branched stem. Flowers small, racemed, white.

O. HARTWEGII Torr.—Foot hills, Yuba, Placer and Sacramento counties. 1—2 f. Radical leaves flat, 3—6'' wide, 5—7-veined. Segments 5-veined, reflexed after flowering. Stamens and sterile fil. barely exserted. May.

## Tribe III.—SMILACINEÆ.

SMILACINA RACEMOSA Desf.—Common in the Redwood hills, Pejaro to the Russian R., Cal. In no wise different from the eastern plant.

S. STELLATA Desf.—Santa Cruz, with the last, north to the Columbia River from Astoria to the Dalles. 1 f. Raceme loose, few-flowered. Berries red.

CLINTONIA ANDREWSII Torr. Root fibrous; leaves few, lance-oval, abruptly pointed, sheathing at base, veins running from base to apex; scape taller than the leaves, bracted, bearing 2—4 umbels, the terminal 10—20-flowered, the lateral 2—4-flowered; flowers bell-shaped, yellowish, 8'' long; segments obtuse; berries 3-celled; cells 8—10-seeded.—Mountain woods near Santa Cruz to the Russian R. A handsome plant, 1—2 f. May.

C. UNIFLORA Kunth. Root tuberous; leaves 2 or 3, lance-oblong, abruptly pointed, margins ciliate; scape not longer than the leaves, bearing one large white flower; segments same shape as the leaves, 10'' long, stamens shorter; berry obovoid, as large as a pea, 9-seeded, blue.—Northern declivities of Mt. Hood (Mr. Brazee), Cascades to Vancouver! June, July.

MAJANTHEMUM BIFOLIUM DC. *β. dilatatum*.—From Astoria to the Dalles, north and east. Leaves generally 3, broad-cordate, 3—5' diameter! Stem 6—10'. Exactly like the eastern plant, except its gigantic size. June. (*Smilacina dilatata*, Nutt.)

## Tribe IV.—UVULARIÆ.

PROSARTES HOOKERI Torr. Stout, leafy, scabrous-puberulent; leaves broadly ovate, acuminate, deeply cordate-amplexicaul; umbels 3—4-flowered, segments spatulate, obtusish; anthers oblong, glabrous; stigma entire.—Santa Cruz to Oakland hills, &c. 2 f. Leaves 2' broad, strongly veined. Stem and branches reddish, pubescent. Flowers greenish-yellow, 9'' long. April. (*Uvularia lanuginosa*, *β. major* Hook.)

P. MENZIESII Don. Nearly glabrous; leaves lance-oblong or ovate acuminate, sessile, or subcordate-clasping; umbels terminal, 1—3-flowered; flowers bell-shaped, pendulous, as long as their stalks; segments linear-lanceolate, acuminate (6''), the stamens often longer, and the slender style still longer; berry lemon-shaped, orange-colored, with 6 rounded seeds.—Santa Cruz to the Columbia. Stem 2 f., erect to first branch, then secund. Flowers greenish. May. (*Uvularia* Hook.)

STREPTOPUS AMPLEXIFOLIUS DC.—Washington Co., Oregon (Mr. E. Walker). Glabrous. Leaves glaucous beneath. Berries red, oblong, 15—21-seeded.

## Notice of some VERTEBRATE REMAINS from Harden Co., Texas.

BY JOSEPH LEIDY, M. D.

The following described fossils were submitted to my examination by Messrs. Geo. N. Lawrence and D. G. Elliot, of New York. They are reported to have been obtained from blue clay and sand, beneath a bed of bitumen, in Harden

[June,